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Market Analysis and Planning Services (MAPS)	
	U.S. Information Services Industry-Specific Markets 1987-1992
	Insurance Sector
	INPUT

1280 Villa Street, Mountain View, CA 94041 (415) 961-3300



U.S. INFORMATION SERVICES INDUSTRY-SPECIFIC MARKETS, 1987-1992

INSURANCE SECTOR

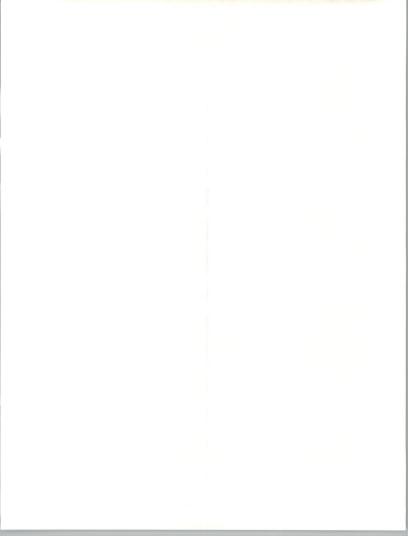


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Market Analysis and Planning Services (MAPS)

U.S. Information Services Industry-Specific Markets, 1987-1992— Insurance

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INSURANCE INPUT

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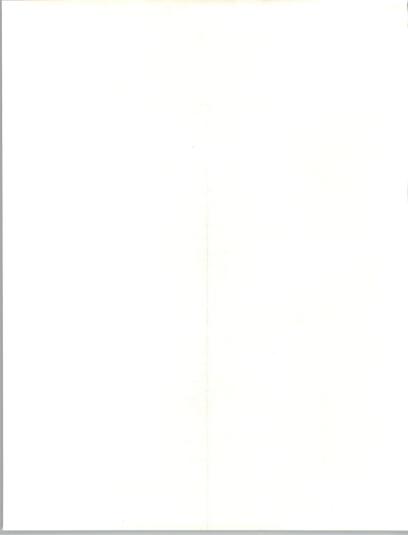


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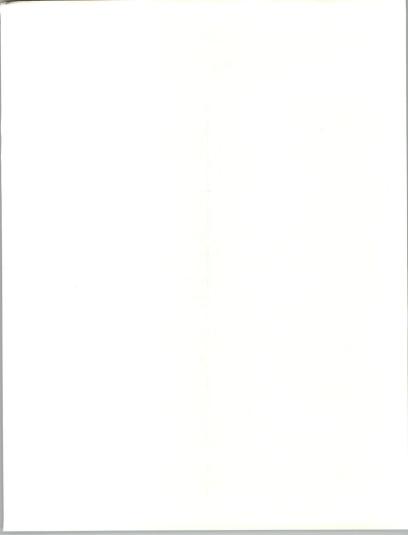


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Issues, Trends, and Events





Issues, Trends, and Events

Δ

Introduction

INPUT analyzes the insurance industry by looking at five segments:

- · Life
- · Property/casualty
- Health
- · Reinsurance
- · Agents and brokers

Credit Insurance is included in life.

Health insurance policies are underwritten by life and property/casualty insurance companies as well as health insurance companies.

Medicare/Medicaid is included in health.

R

Life

The life insurance segment continues to feel the impact of diversification into financial areas.

- During the past decade, life insurance companies have responded to the thrust of banks' entrance into insurance activities by introducing new products with enhanced investment characteristics.
 - These new products include universal life, variable life, and universal variable or flexible-premium variable life insurance policies. Exhibit
 I-1 describes the different product lines of life insurance offered.
- Despite the Federal Reserve Bank's decision to reject Citicorp's attempt to acquire a South Dakota bank in order to market insurance services nationwide, and despite the failure of Congress to enact legislation permitting depository institutions to sell insurance, bank entry into insurance seems inevitable.



EXHIBIT I-1

LINES OF LIFE INSURANCE POLICIES AVAILABLE

Universal Life	Policy holder can vary the amount of insurance protection and the size and timing of premium payments.
Variable Life	The death benefit varies according to a stock fund's performance. The premium payments are fixed.
Flexible Premium Variable Life	Combines premium payment flexibility of universal life insurance with equity-based death benefit of variable life insurance.
Whole Life	Provides death benefit at insured's death. The premium payments are fixed. The policies have a cash value against which loans can be made at an interest rate specified in the policy.
Term Life	Death benefit is payable only if the insured dies within the period specfied in the policy. Premium payments are fixed.

- In addition to deregulation, legislation or proposed legislation that affects the life insurance sector includes the Gramm-Rudman tax reform act and proposed legislation that would prohibit gender-based rate setting.

The life insurance segment is dominated by direct writers. Although this segment is facing increased competition from benefits consultants for group business, full-service financial planners, and other financial institutions, some insurers are converting their direct agent networks into independent brokers who (initially) primarily handle their former companies' products.



INSURANCE INPUT

The introduction of interest-sensitive products has developed the need to monitor investment rates in order to offer attractive and competitive products and to supply agents with information systems that will aid them in constructing policies that fulfill individual customer needs.

- Heavy emphasis has been placed on systems that support the marketing, administration, and processing of these new complex policies.
 - While many insurers have purchased software or contracted for outside processing services, CIGNA has contracted for CYBERTEK Computer Products to provide total facilities management for the sale and administration of its group universal life policies.
- Although the relationship between the direct-writer insurance company and its agents has been weakening in past years, the proliferation of new and more complex products has pushed some companies into offering financial incentives to agents for the purchase of personal computers.

Another trend in this segment is the change from a product orientation to a customer orientation. There is an interest in systems that allow single-file access to all of a customer's policies, rather than access to the customer's policy within each product-line file. Development and implementation of these customer data base systems is increasing.

While individual life insurance continues to be the principal type of life insurance protection, group life insurance is growing rapidly. Credit life insurance is also growing, although from a much smaller base.

- Group life insurance contracts are issued to employers, unions, professional associations, and other groups.
- Credit life insurance is designed to pay the balance of loans if the borrower should die before repaying the amount due.

C

Property/Casualty

The year 1987 was a spectacular one for property/casualty companies. Nine-month income figures were 24% higher than 1986, but recently prices have begun dropping again. Industry analysts expect decent profits in 1988 and softening in 1989. Price reductions in 1988 are likely to be limited because the stock market crash of October 19, 1987 reduced the industry's surplus, the reservoir of funds used to back insurance policies.

Exhibit I-2 describes the different types of property/casualty policies available.

The years 1979 through 1985 were hard years for the property/casualty segment of the insurance industry.

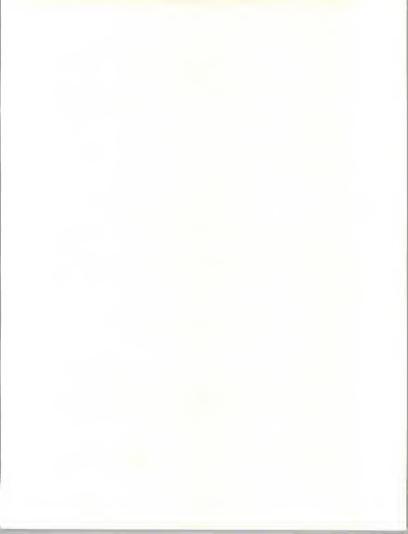


EXHIBIT I-2A

PROPERTY/CASUALTY PRODUCT LINES

Personal Lines

Covers bodily injuries and property Auto damages caused by insured and/or

sustained by insured and passengers.

Covers damages to the residence due to Residential

fire, windstorm, and other common perils, theft of personal property, and legal liability for bodily injury or damage

to property of others.

Commercial Lines

Covers damages due to allied lines Property

(sprinkler leakage, flood, earthquake, business income, and extra expense), marine, crime, surityship, and other

property lines.

Covers insurance benefits that are Liability payable to a third party to which the

insured is legally responsible.

- Includes the following two sublines: General Liability
 - Covers losses that arise from a Contractual business's assumptions of liability under

a written or oral contract.

Covers losses that arise from the sale, · Products or manufacturing, handling, or distribution Completed Operations

of the insured's products.



EXHIBIT I-2B

PROPERTY/CASUALTY PRODUCT LINES

- · Liability (cont.)
 - Worker's Covers work-related injury, death, and Compensation disease for employees regardless of fault.
 - Professional Includes the following three sublines:
 - Malpractice Coverage for medical professionals against loss for damages from alleged error in the performance of the insured's services.
 - Errors and Omissions
 Covers against losses from others resulting from failure, through error or unintentional omission, on the part of the policy holder.
 - Directors' and executives against financial claims arising from errors in judgement, omissions, breach of duty and wrongful acts related to their business activities.
 - Umbrella Covers against losses in excess of amounts covered by other liability insurance policies. Also protects the insured in many situations not covered by usual liability policies.



- In the late 1970s and early 1980s, premiums were dramatically lowered to compensate for excessively high premiums charged between 1974 and 1978.
- During the high interest rate years of 1980 through 1982, underwriting losses were offset by investment income.
- During 1983 and 1984, investment income declined as interest rates
 dropped and underwriting losses increased as insurance companies
 struggled to gain market share by maintaining or further lowering
 premiums. Large settlements awarded to claimants during the past few
 years have also contributed to the tight market conditions. Operating
 earnings after taxes for the industry as a whole were lowest in 1984 and
 1985.
- During 1985 and early 1986, insurance companies either maintained premiums while increasing productivity and lowering or maintaining expenses, or increased premiums dramatically.

The effects of these hard years are widespread.

- The relationship between insurance companies and agents is changing.
 Insurance companies are relying more heavily on agents to write higher premium volumes in order to remain competitive. Many insurance companies are cutting back on the number of agents used, retaining the larger volume agents while cancelling agents who do not meet premium volume guidelines.
- Both direct writers and independent-agent insurance companies are pressuring their agents to automate.
 - Some companies, such as Aetna Life and Casualty and Travelers Corporation, offer financing assistance or other incentives in order to tempt agents into automating.
 - Other insurance companies have set up two-tiered commission schedules where agents who provide underwriting as well as scheduling and claims administration services receive higher commissions than agents who only provide underwriting.
 - One result of the push to automate independent agents is a trend for these agents to become more like brokers, in effect losing some of their independent status.
- Insurance companies are tightening underwriting standards and lowering liability limits partially in response to large settlements awarded to claimants in recent years and to underwriting losses in general.



- Insurance companies need a larger number of policies at the lower liability limits in order to maintain market share.
- Many companies are having difficulty in obtaining or affording coverage for umbrella, general-product, and/or professional directors' and officers' liability. Some companies are going without insurance while others have banded together to form captive insurers, insurance companies that are financed by their own policyholders.
- There is great pressure upon the government from business and professionals to institute uniform standards and award limitations for commercial, professional, and product liability.
- Some insurance companies are entering new markets by acquiring companies that provide software and services to the insurance industry.
 - A few insurance companies have formed or acquired information services companies to provide software and services outside the insurance industry.

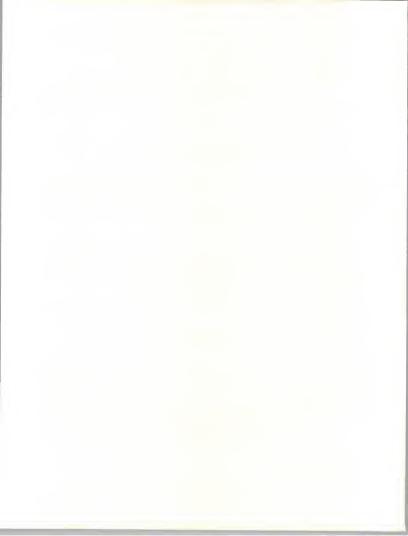
The implications of these issues to information-services vendors include the following:

- Property/casualty companies are developing new or enhancing existing claims-processing systems in efforts to reduce one of the most significant cost areas in the property/casualty segment.
- Casualty rating systems are needed to assist underwriters in analyzing risks and setting premiums while insurers are tightening underwriting standards.
- Agent support systems are of high priority to increase agent productivity and to lower costs.

Health

A growing economic crisis in health care will continue to be the medical industry's primary concern. The health insurance segment is under tremendous pressure from employers/customers to contain costs as premiums have increased steadily and dramatically in the past decade.

 Although rising costs of medical care are the major factor for increasing premiums, administrative and clerical errors also contribute to the increase. Hospital billing errors are commonplace, especially for hospital bills over \$10,000. Errors range from billing for unperformed surgical procedures to gross overcharges for medical supplies such as sterile gloves or pills.



 Some employers are scrutinizing their bills more carefully or hiring outside auditors to review them. Other employers have set up incentive plans for employees to catch errors on their individual bills.

- Insurance companies are feeling the heat because employers do not believe they are aggressive enough in uncovering hospital errors or their own errors.
- Companies are concerned about the potential costs of the AIDS epidemic, which is estimated to cost insurance companies \$65 billion by the year 2000.
- This segment is facing intense competition from organizations that employers/customers have turned to in order to reduce health-care benefit costs.
 - Health maintenance organizations (HMOs) provide medical care to members using physicians and facilities affiliated with the HMO for a fixed annual fee.
 - Preferred provider organizations (PPOs) allow members to receive medical care from the physicians of their choice for a fixed annual fee.
- Many of the nation's health-care professionals see Medicare and Medicaid payments as inadequate and as placing further pressure on cost control.
- Group health insurers are preparing rate increases for 1988 to meet continually rising costs. Cost containment kept medical-cost inflation to 7.5% in 1986, but 1987 saw an annual increase greater than 11%. More visits to doctors and hospitals are driving up these costs.
 - Self-insurers are usually large corporations that choose to insure themselves for all but major medical expenses.
 - Individual physicians and local or regional hospitals have banded together to form physician or hospital cooperatives in order to share overhead expenses and reduce prices to patients.
- Health insurers must offer contemporary flexible benefit plans to fulfill individual employer/customer needs and offer services such as prepayment audits in order to survive.

The implications these issues have on information vendors include the following:



 Claims-processing systems must be improved to lower costs. Cost management features need to be included in claims-processing systems including, the ability to process second-opinion claims, ambulatory surgery, and PPOs, as well as to provide prepayment audits.

- In other attempts to reduce costs and errors, claims processors are moving from batch to on-line systems.
- Health insurance marketing systems must be flexible as insurers build benefit plans to suit individual customers' needs.

The federal government is exerting strong pressure on hospitals to reduce health-care costs. The federal government has changed from a cost reimbursement payment system to a fixed-fee or prospective-payment system for its Medicaid, Medicare, and other medical-assistance programs. This one step alone has a major impact on hospitals' ability to generate revenues and cover costs.

 Hospitals and other providers to Medicaid/Medicare patients need information systems that will provide cost-based accounting and claims administration and processing.

E

Reinsurance

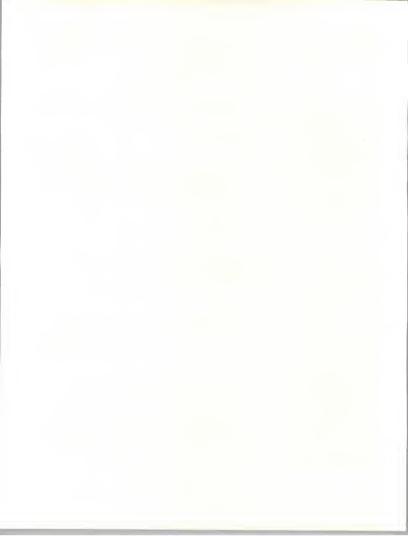
Reinsurance is an arrangement by which one insurer transfers all or part of its risk under a policy or group of policies to another insurer (reinsurer). The net effect is the reduction of risk to the original insurer. Reinsurance is primarily taken out for life and property/casualty insurance policies.

This segment is facing similar problems to those of the the property/casualty segment.

 Reinsurance was underpriced in recent years, and currently insurers are not able to collect from reinsurers that have gone out of business or are in deep financial trouble. Prices did achieve a greater measure of stability in 1987.

The reinsurance capacity shortage stems from the reluctance of reinsurers to take an additional reinsurance business or, in some cases, accept reinsurance of particular risks.

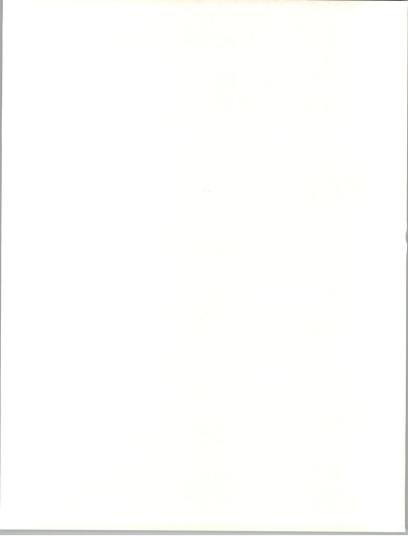
In addition to the standard insurance applications, such as claims processing and financial reporting, reinsurers also need unique applications which include processing of ceded and assumed risks, contracts permitting syndication, quota share, treaty abstract, retrocession, reinstatement, and currency conversion.







Market Forecasts





Market Forecasts

A

Introduction

The insurance sector includes organizations that fall into SIC codes 63 and 64. These include carriers for life insurance; accident and health insurance; medical service plans; fire, marine, and casualty insurance; surety insurance; title insurance; and pension and health and welfare funds.

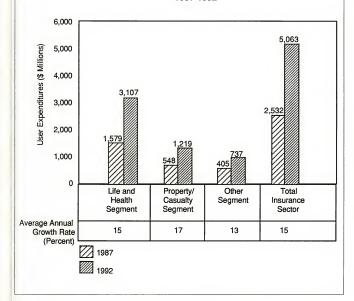
For quantitative forecasting, INPUT consolidates the insurance sector into three segments: life and health (which also includes pensions, health and welfare funds, and Medicaid/Medicare), property/casualty (which also includes surety and title insurance), and other insurance (which also includes agents and brokers).

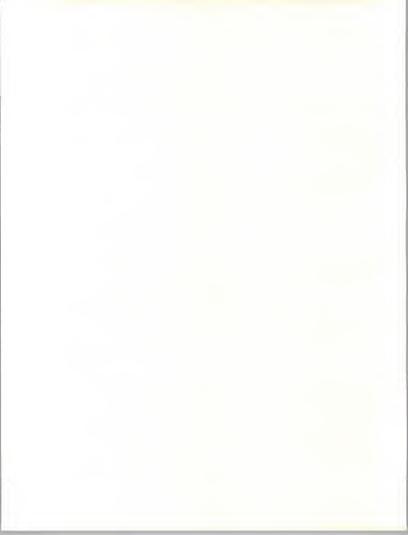
User expenditures of industry-specific information services for the insurance sector will grow 15% annually through 1992, increasing from \$2.5 billion in 1987 to \$5.1 billion in 1992. Please see Exhibits II-1 through II-3.

Exhibits IN-A-1 through A-4, in Appendix IN-A, contain the detailed forecast data base for each year from 1986 to 1992 for the total insurance sector as well as for the life and health, property/casualty, and other insurance segments.

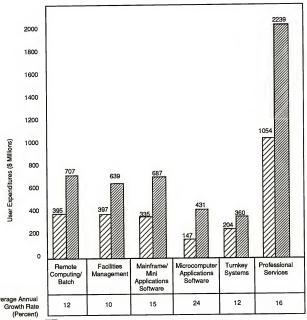


INSURANCE SECTOR MARKET FORECAST COMPARISON INDUSTRY-SPECIFIC INFORMATION SERVICES, 1987-1992



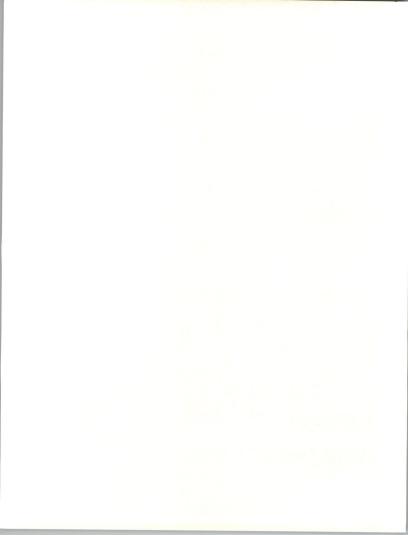




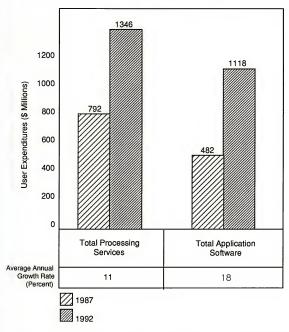


Average Annual

1987 1992









В

Life and Health

The life and health marketplace consists of a few major players for each segment—life, health, and Medicaid/Medicare—and a greater number of smaller vendors.

Life and health information services will grow 15% annually through 1992, increasing from \$1.6 billion in 1987 to \$3.1 billion in 1992. See Exhibit II-4.

- Total Medicaid/Medicare information services will exceed \$440 million in 1987 and will be split between the state and local government sector and the insurance sector. Medicaid/Medicare for the insurance sector will total \$340 million, with \$225 million in processing-facilities management and the remaining \$115 million in remote-computing services.
- Mainframe/mini and microcomputer applications software for the life and health segment are expected to grow 16% and 23%, respectively, through 1992. Turnkey systems are expected to grow at 13% annually, and processing services at 11% annually. For details, see Exhibits II-4 and IN-A-2.

C

Property/Casualty

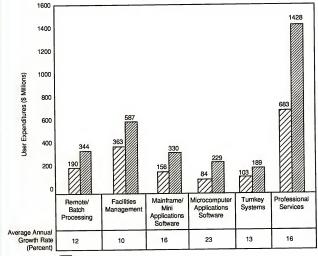
The property/casualty marketplace is dominated by Policy Management Systems Corporation (PMSC). However, a few other vendors are gaining market share and are beginning to compete directly with PMSC.

Property/casualty information services will grow 17% annually through 1992, increasing from \$548 million in 1987 to \$1.2 billion in 1992, as shown in Exhibits II-5 and IN-A-3. Professional services was the largest delivery mode in 1987, and will continue to be in 1992. Microcomputer applications software is the fastest growing segment, at 28%, starting from a small base.



EXHIBIT II-4

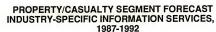


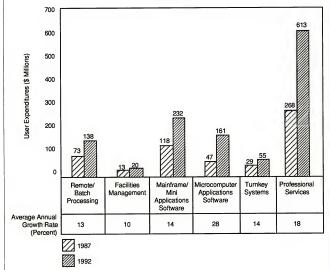












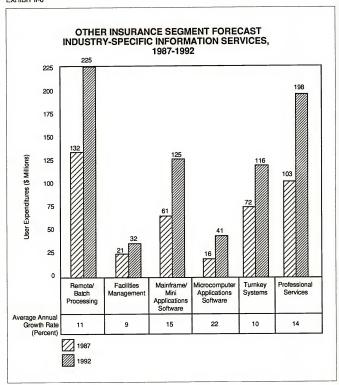


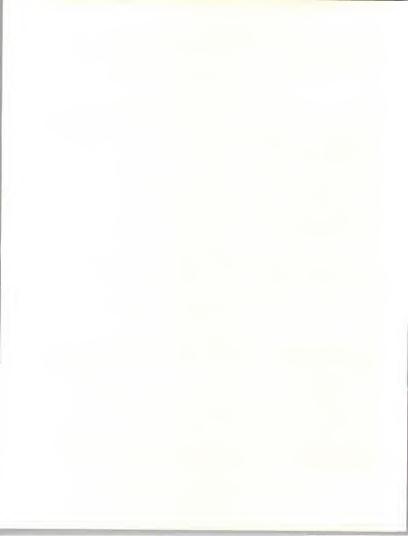
n

Other Insurance

The "Other" insurance segment will grow at 13% annually from \$405 million in 1987 to \$737 million in 1992, as shown in Exhibits II-6 and IN-A-4. The push for agents to automate is fueling growth in this segment, while the elimination of smaller, lower-premium, volume agents is offsetting the growth. Remote/batch processing was the largest delivery mode in 1987 but will be supplanted by professional services in 1992.



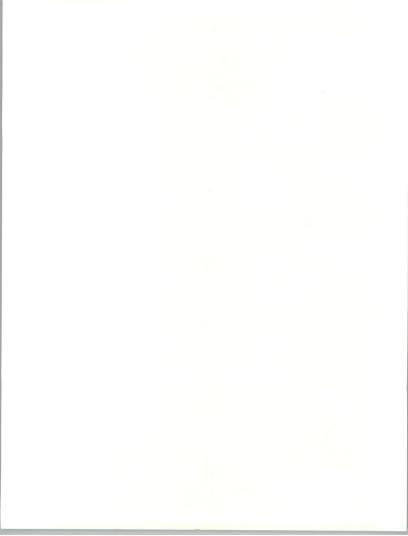








Competitive Developments





Competitive Developments

A

Introduction

The insurance information-services market is characterized by:

- · The presence of large, well-established vendors.
- The growing number of information-services vendors owned by an insurance carrier or group of insurance carriers.

The market shares of selected leading vendors in the insurance sector are shown in Exhibit III-1.

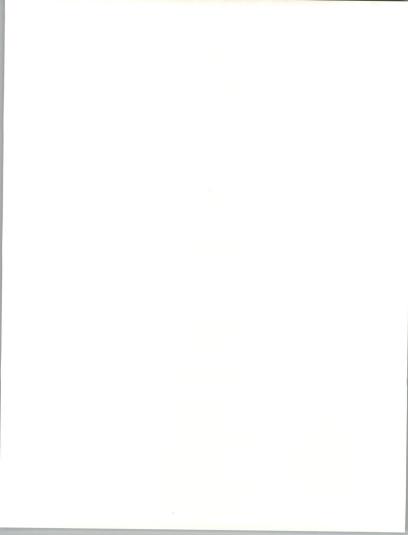
Leaders in the life insurance market include The Continuum Company, CYBERTEK Computer Products, PALLM, and Information Systems of America.

Leaders in the health insurance marketplace include Electronic Data Systems (EDS), Advanced System Applications, Erisco, Dyer, Wells and Associates, and McDonnell Douglas Information Systems Group.

Medicaid/Medicare leaders are The Continuum Company, System Development Corporation, EDS, Computer Sciences Corporation, and McDonnell Douglas Information Systems Group.

Leaders in the property/casualty market include Policy Management Systems, PALLM, and Equifax.

Agency systems market leaders are Redshaw, ISI Systems, ARC/AMS, Agena, and Insurenet.



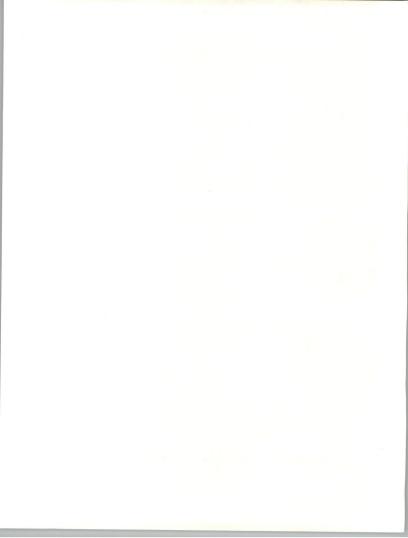
VENDOR SHARES OF INSURANCE SECTOR INDUSTRY-SPECIFIC INFORMATION SERVICES, 1987

(\$ Millions)

		Segments Served**	Delivery Mode				Total	Percent Share
	Vendor Name		Processing Services	Applications Software	Turnkey Systems	Professional Services	Revenue (\$M)	of Total Insurance IS Sector
	Electronic Data Systems (EDS) Policy Management Systems	H,L,PC	300	70		50	420*	16.6
۷.	(PMSC)	H.L.PC	78	67	20	30	195	7.7
2	Equifax	PC.A	120	"	10		130*	5.1
	Advanced Systems Applications (ASA)	н	7	47			54°	2.1
5.	McDonnell Douglas Information				5		30*	1.2
	Systems	Н	25		30		50*	2.0
	ARC/AMS	A	20		30	35	58*	2.3
	The Continuum Company	H,L	6	17		35	40	1.6
	Redshaw	Α			40	1	32*	1.3
	ISI Systems	PC,A	19	13			27	1.1
	Agena Corporation	A	13		14		27	1.1
11.	Insurenet	A			27		24*	1.0
		L	10	14			24*	1.0
	PALLM	H,L,PC	12	12			24	""
14.	Information Systems of America (ISA)	H,L,PC,A	20				20*	.8
15	Vantage Corporation	L		7	6	5	18*	.7
16.		Ā		11	1		11*	.4
17.		PC	1	10	l	2	12*	.5
	Financial Data Planning	L,A	1 7	4	1		11*	.4
	Dyer Wells	H	1	11	l		11*	.4
	Applied Systems	A	İ	11			11*	.4
Subtotal, leading Vendors:		637	294	152	122	1205		
		(80%)	(61%)	(74%)	(12%)	(48%)		
	All other Vendors:		155	188	52	932	1327	
			20%	(39%)	26%	(88%)	52%	
Total Insurance Market:			792	482	204	1054		

^{*} INPUT estimate

^{**} H = Health L = Life PC = Property, Casualty A = Agency



R

Vendor Profiles

1. ARC/AMS (1 Heritage Drive, North Quincy, MA 02171)

a. Products/Services

ARC/AMS provides IBM Series I-based minicomputer and IBM PC-based microcomputer turnkey systems and batch and remote-batch processing services to insurance agents and holders.

- · Available software modules for turnkey systems are:
 - ARC/AMS Series I: Accounting, billing, daily retrieval, claims, client services, diary, insured reporting, system control, letterwriter, query, and marketing (prospecting and sales analysis).
 - The Pathfinder (Formerly AMS Micro) offers: Accounting, billing, claims, marketing (profiling and query), daily retrieval (forms and interface), and diary. Pathfinder can be used as a standalone PC/AT system or as a terminal to the ARC/AMS Series I system.
 - Scout, introduced in 1987, offers many of the same functions as Pathfinder, plus multiterminal support, office automation functions, and an upgrade to Pathfinder for \$4,995.
- "The Batch Service" provides batch and remote-batch processing. Available applications include the 24 accounting/management reports, Agent-Rite Claims, payroll, accounting, consolidation package, central management reporting, and surplus lines tax program.
- Pioneer is a repackaging of "Batch Service" on a PC. There are over 300 Pioneer systems installed.

b. Markets Served

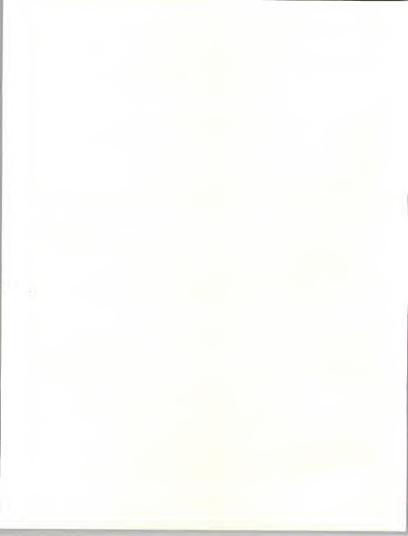
ARC/AMS provides products and services to independent agents/brokers within the insurance industry sector, with over 10,000 U.S. customers.

c. Company Strategy

ARC/AMS is an industry innovator in agency/company interface development.

d. Recent Activities

ARC/AMS and Compare Data Corporation entered into a joint development and marketing agreement that will provide for the sharing of a common policy data base by joining comparative rating software and agency automation.



In 1986 ARC/AMS acquired Savage Computers, which provides rating software. Also in 1986, ARC/AMS acquired the customer base of Computerized Insurance Accounting of Oklahoma City, a batch-processing service company.

An on-line information network (A1 I-NET) was introduced in 1987 by ARC subsidiary ANS for motor vehicle reports, stock quotes, and credit reports.

AMS and McCracken Computer launched a cooperative effort to incorporate ACORD standards for agency/company interface into their respective systems.

2. Advanced System Applications, Inc. (1 ASA Plaza, Bloomington, IL 60108)

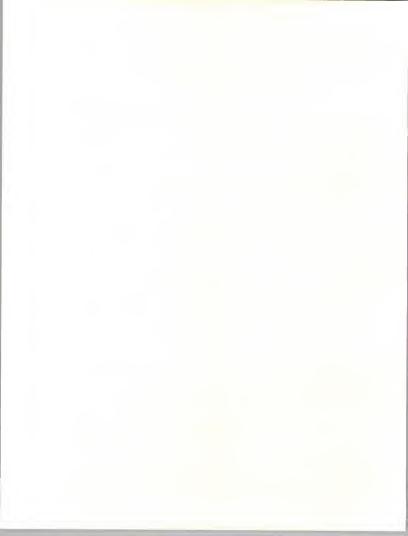
a. Products/Services

Advanced System Applications, Inc. (ASA) provides on-line applications software and data-processing services for the health insurance industry.

ASA's IBM mainframe software products include the following:

- Claims Administration and Payment System (CAPS) covers basic, major medical, comprehensive, disability, dental, and vision health insurance plans.
- Claims Administration System (CASII) processes medical, dental, and vision claims. This product was acquired in 1985 from System Development Corporation.
- CAPSule is a health claims reporting system, interfacing with CAPS, but also useable on a standalone basis.
- Advanced DentaLogic Subsystem (DLS) automates the methodology of American Dental Examiner, Inc.'s Dental Claim Manual.
- ACESS converts data to the CAPS standard and creates a new eligibility file for updating records.
- ADMIN is a group billing and administration system.

Remote processing applications available include CAPS, ACESS, and selected CAPSule reports.



b. Markets Served

ASA targets the health insurance industry sector and large companies that administer in-house insurance plans.

c. Company Strategy

The company will continue to concentrate on the health insurance segment. The company expects its rapid growth to continue from sale of its software products, which address productivity measurement and costcontainment concerns.

3. The Continuum Company (3429 Executive Center Drive, Austin, TX 78731)

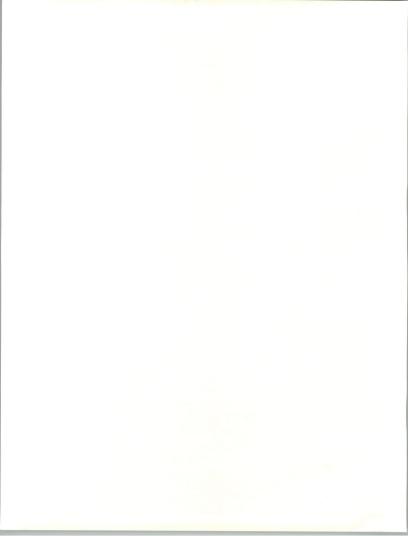
a. Products/Services

The Continuum Company (TCC) provides software products and processing and professional services to health and life insurance companies. TCC offers the following software products:

- TCC's primary revenue generator is the Client/Contract Administration (CCA) System used for designing, selling, and servicing insurance and financial services products. CCA consists of four modules, which are fully integrated:
 - Client Management System, which TCC emphasizes as an industry CIF technology leader
 - Product Management System
 - Contract Management System
 - Distribution Management System

TCC has invested more than \$40 million in completing this key product line.

- TCC's UFE/70 (Continuum) Systems consist of software for policy management. Available system components include:
 - Home office administration systems
 - Support systems
 - Optional systems



- Life-COMM III, acquired from Informatics General in 1984, is an integrated administrative system that supports new business, policy, agency, and actuarial administration; corporate accounting; and field force requirements.
- · Microcomputer software products include:
 - Continuum Life Agency Support System (CLASS)
 - Sigma for agency management
 - Ratebook Entry System for the development/rating of policies to be entered with TCC's Policy Administration Systems
- · Professional services include:
 - Custom programming
 - Systems design
- Project management

One hundred and ninety clients utilize Continuum or Lifecomm products; they belong to a user consortium to share development costs and enhancement planning.

TCC's mainframe software in available to clients as a remote computing service.

b. Markets Served

TCC provides products and services to the life, health, and annuity insurance markets.

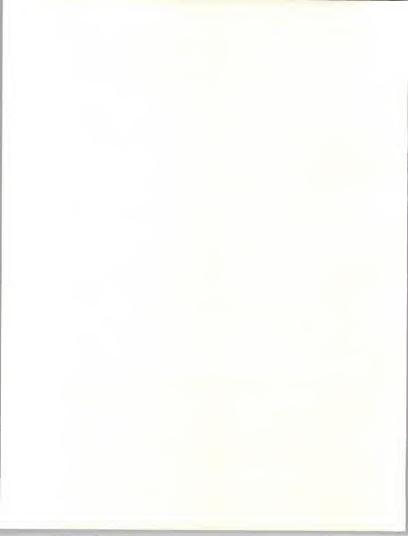
c. Company Strategy

TCC will continue to use advanced technology development to maintain its leadership position in the life insurance industry.

d. Recent Activities

The growth of TCC is keyed to the success of CCA. During 1986-1987, clients deferred purchases of CCA, awaiting its completion. Version 1.0 is now being delivered to 104 insurance companies who have contracted for it.

TCC has entered a VAR agreement with Syntellect to provide "Infobotics", an AI-based voice response system to answer calls from clients and agents.



4. CYBERTEK Computer Products, Inc. (6133 Bristol Parkway, Culver City, CA 90230)

a. Products/Services

CYBERTEK offers processing services, software products, and professional services for life insurance companies.

CYBERTEK's new CK4 architecture and family of products incorporates IBM's SAA as an integral part of this architecture.

CYBERTEK's primary applications software is CYPROS/AP, an integrated marketing, administration, and communication system.

- Subsystems include new business, in-force policies, agent's systems, and administrative support systems.
- Micro Information Manager (MIM) is available as part of CYPROS/AP or as a separate product. MIM permits the networking of IBM PCs for office automation and life insurance functions. MIM/NET is a local area network product.

SalesPro is a standalone integrated proposal software package that operates on IBM PCs.

Processing services consist of facilities-management services and remote-computing services.

 Applications available to processing clients include CYPROS/AP and MIM.

Professional services available to CYBERTEK software clients include project planning, system installation and modification, customer training, and technical consulting.

b. Markets Served

CYBERTEK provides products and services to the life insurance industry sector only.

c. Company Strategy

CYBERTEK will continue its emphasis on programs for support and professional services to be extended over the lifetime of software licenses.

CYBERTEK has a customer base of over 100 life insurance companies; three affiliates of the Kemper Group account for roughly 30% of total revenues.



INSURANCE

d. Recent Activities

CYBERTEK entered into a long-term agreement to provide total data processing services for Connecticut General Life Insurance Company's (CIGNA) Group Universal Life Insurance Marketing Program.

CYBERTEK completed development of I-System, a new software system that provides processing for a range of advanced and traditional life insurance products and related financial services. Initial deliveries of I-System are now being made to 13 clients.

e. Future Directions

The company will continue to develop new software and services to meet demands as life insurance and financial services companies introduce more sophisticated policies, products, and services.

CYBERTEK has established a Workstation Systems Division to identify new markets for the workstation product line.

5. Equifax, Inc. (1600 Peachtree Street N.W., Atlanta, GA 30309)

a. Products/Services

Equifax provides processing services and software products. Equifax's products and services to the insurance industry include the following:

- CLUE is a new data base that allows property/casualty companies to share loss information, and thus more accurately rate policies and identify fraud. The company is expanding this service to 30 states.
- The company offers IBM-compatible software products that may be purchased or used as a processing service. Modules available include:
 - Automated Underwriting System
 - Micro Rating System
 - Policy Information and Management System
 - Distributed Communications System
 - Company Communications System
- Data Rearrange System
- Universal Billing
- Agency Bill
- Universal Distributor System
- Premium Accounting and Claims Administration
- Worker's Compensation Unit Statistical Reporting System
- Universal Commercial System



- Universal Personal System
- Information Gateway System
- The Dataflo division of Equifax provides for motor vehicle record information to automobile companies. The three modes of delivery are remote/remote-batch, and batch processing. The bulk of Equifax's revenues from insurance companies come from this service, which is priced on a per-transaction basis.

Other products and services not related to the insurance industry sector include customer credit reporting and processing and software products for the utilities industry.

b. Markets Served

Equifax provides products and services to the life/health and property/ casualty insurance industry sectors, as well as the banking/finance, retail, and utilities industries.

c. Recent Activities

C.B. Rogers, former IBM senior vice president, became president and chief operating officer of Equifax as of October 1, 1987.

d. Future Strategies

Equifax will emphasize the scope of its delivery of insurance data loss information via electronic means. Claims histories for commercial vehicles could be next.

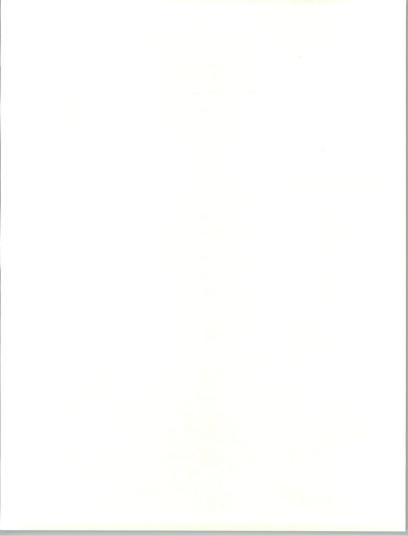
6. ISI Systems, Inc. (161 Forbes Road, Braintree, MA 02184)

a. Products/Services

ISI Systems provides processing services and application software products.

Processing applications available include the following:

- · Mass-Auto for Massachusetts auto insurance companies
- ARTS (Assigned Risk Teleprocessing System)
- · ICAPS—similar to ARTS but for commercial auto business
- · Administrative Billing System
- · Pol*Star-policy storage and retrieval system
- · Analyzer-expert system for risk analysis



Software packages available include the following:

 ACC-U-RATE is an Apple microcomputer system for rate/quote for package and monoline policies, as well as private passenger and homeowner policies.

- Insurance Writer, a more comprehensive rate/quote package, is replacing ACC-U-RATE.
- Ratabase is a premium calculation and statistical package for use with insurance policy writing systems. It runs on a mainframe or on IBM PC/XT or AT microcomputers. During 1988, ISI plans to introduce an on-line CICS version of Ratabase to expand their market.

b. Markets Served

ISI provides products and services to the property/casualty insurance sector only.

c. Company Strategy

ISI will continue to concentrate solely on the property/casualty sector and expects to continue the considerable growth in revenues it has enjoyed in past years. ISI volumes increased by 28% during fiscal 1987 to \$31.7 million. ISI projections call for \$100 million revenue levels by 1991.

d. Recent Activities

In June 1986, ISI Systems became a private, independent company. From 1976 through May 1986, ISI was a subsidiary of Grumman Corporation. Currently, the company is primarily owned by its president, Charles C. Johnston, and other ISI employees.

ISI introduced The Distributor, a software product used by insurers to send software updates from their mainframes to personal computers in agent and branch offices.

The Forms Processing System is a P/C-based new product for designing and producing policy documents.

7. Information Systems of America, Inc. (500 Northridge Road, Atlanta, GA 30338)

a. Products/Services

Information Systems of America, Inc. (ISA) markets and supports financial and investment management applications-software products. ISA also provides product-enhancement and consulting services to its clients.



ISA provides the following IBM mainframe and compatible software products:

- ISA Accounting, Budget, and Cost Systems is a financial management and reporting system.
- ISA Cash Disbursements System centralizes and controls the entire disbursements process.
- · ISA EXTRACTO is a file management reporting system.
- · TELEXTRACTO is a report generator.
- PRISM is a portfolio reporting and investment-securities management system.
- OSCARS, PRISM's predecessor, is an on-line securities control, analysis, and reporting system.
- · Foretax provides tax planning and compliance.
- TAX DIRECTOR is a microcomputer version of FORETAX.

b. Markets Served

ISA provides services to the insurance, banking and finance, state government, and other sectors.

c. Company Strategy

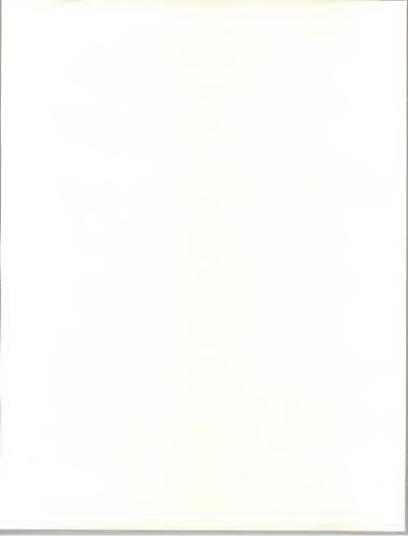
ISA continues business expansion into the U.K. through UIS, Limited, a sister subsidiary.

8. Packaged Automated Life/Liability Management, Inc. (2606 Fortune Circle, East Drive, Indianapolis, IN 46241)

a. Products/Services

PALLM provides applications-software products and professionalservices consulting.

PALLM offers the following software products for home office management:



- PALLM-VECTOR is for life/health insurance companies. Available modules include the following:
 - New Business/Policy Issue
 - Policyholder Service
 - Premium Billing
 - Premium Processing
 - Accounting and General Ledger
 - Marketing and Agency/Commissions
 - Marketing and Agency Performance
 - Agent Licensing
 - Universal Life I
 - Variable Universal Life II
 - Client Management
 - Actuarial Reporting
- Annuity Administration
- Teleprocessing Executive
- PallmPAC is for property and casualty insurance companies. Available modules include the following:
 - Reinsurance Billing and Payables
 - Automobile Rating
 - Homeowner's Rating
 - Policy Administration
 - Claims Administration
 - Billing and Collections
 - Accounting and General Ledger
 Disbursements/Check and Draft Reconciliation
 - Ouote Management
 - Bureau Reporting
 - Alpha Inquiry/Client Access
 - Investment Accounting
 - Automated Depreciation

Professional services consulting to assist in customization of its software packages to meet specific client requirements is also provided.

PALLM's POISE product aids financial and actuarial officers in devising and evaluating investment strategies and managing risks.

b. Markets Served

PALLM serves the life/health and property/casualty segments of the insurance industry.



c. Company Strategy

PALLM plans to increase its presence in the property and casualty insurance segment and directly compete with Policy Management Systems, the acknowledged industry leader.

d. Recent Activities

In August 1986, PALLM announced PALLM V-TASC (VECTOR Turnkey Administrative Software and Computers), a minicomputer turnkey system for smaller life and health insurers.

e. Future Directions

PALLM will continue to modify and develop products to serve the life and health segment while continuing its push into the property and casualty segment.

9. Policy Management Systems Corporation (P.O. Box 10, Columbia, SC 29202)

a. Products/Services

Policy Management Systems Corporation (PMSC) provides processing services, software products, professional services, and turnkey systems.

PMSC's primary IBM or compatible mainframe software packages are:

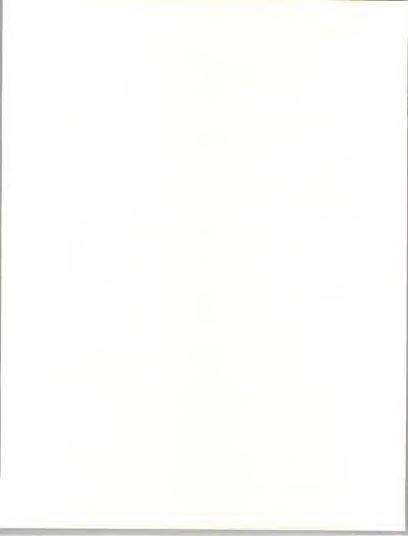
- · Policy Management System, the company's primary product
- Insurance Management Information System
- · Account Reconciliation System
- · Financial Management System
- Securities Management System

IWS-Premium Handling System and IWS-Claims Handling System are microcomputer software products marketed under the trade name Insurance Work Station.

A microcomputer tool, Agency Work Station (also known as the Bundle), automates commercial and personal rating for multiple states and multiple companies and is geared to independent agents.

Processing services include facilities-management and remote-computing services.

 Available remote-computing applications include automobile policy, property/casualty, assigned risk, and claims estimating.



· PMSC's data base service offers Insurance Information Bank.

The Basic Processing System is a turnkey system based on IBM 4300series computers and is targeted to small- to medium-sized insurance companies, brokers, and agents.

Professional services provided to PMSC clients include project-planning services, implementation and migration services, education services, and consulting services.

PMSC has introduced an expert health claim-handling system, ExClaim.

b. Markets Served

PMSC provides products and services to the property and casualty insurance industry sector.

c. Company Strategy

The company continues to invest a large portion of total revenues (\$29 million in 1986) on research-and-development activities and to acquire products and/or companies whenever acquisition is more cost-effective than internal development.

PMSC has become an IBM IMAP, extending its ties to the IBM sales force.

Arthur Andersen has the rights to market PALLM's products outside the U.S.

d. Recent Activities

PMSC is teaming up with ADP, tapping ADP's extensive data base of collision records from claims adjusters and identifying problem drivers. The resulting data base is competitive to Equifax's CLUES. The system will be updated frequently (perhaps daily) to provide current information.

PMSC has begun utilizing IBM's DB2 on its IMIS products to improve system flexibility.

e. Future Directions

PMSC plans to continue its expansion into the group insurance market and its diversification into foreign markets.

PMSC is investing heavily (\$100 million) into future development of its Series III systems, incorporating IBM's SAA as a standard.



10. Redshaw, Inc. (103 Yost Boulevard., Pittsburgh, PA 15221), a subsidiary of Hartford Insurance

a. Products/Services

Redshaw provides turnkey systems, associated support services, and hardware/software upgrades to existing systems.

Redshaw's turnkey systems are based on its Comprehensive Insurance System, a total agency-management information system that integrates file-retrieval, accounting, and word-processing functions. The turnkey systems' Wang hardware configurations, telecommunications/networking capabilities, and reporting capabilities vary by model.

The target markets of turnkey systems offered include the following:

- Comprehensive Insurance System is targeted to insurance agencies and companies with annual premium volumes of \$500,000 to \$10 million, processing up to 50,000 policies a year. This has been Redshaw's primary source of revenues.
- Series/2 is targeted to property and casualty insurance agencies and brokers with annual premium volumes over \$10 million.
- MicroPlus is targeted to agencies with \$500,000 to \$3 million in annual premium volume, at a price 25% below other Redshaw products.
- Redshaw Advantage is targeted to agencies with \$2 million to \$10 million in annual premium volume.

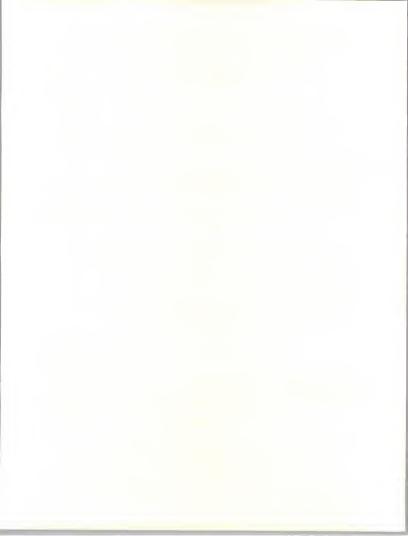
b. Markets Served

Redshaw provides products and services to independent property and casualty insurance agents and insurance brokerage firms. The majority of customers have annual premium volumes of \$1 million to \$20 million.

c. Recent Activities

Redshaw has announced a multicompany interface for its users, allowing agencies to connect their Redshaw systems with more than a single insurance company. Of the 733 Redshaw users in the U.S., the majority connects with two to five companies.

In August 1986, Redshaw introduced Suplerlink, a line of advanced terminal emulators that enable agents to run Wang PCs and IBM PC/XTs as integrated Redshaw System workstations.



11. Electronic Data Systems (EDS) (Insurance Division, 7171 Forest Lane, Dallas, TX 75230)

a. Products/Services

Facilities management, systems integration, professional services, and interactive processing are offered.

EDS's newest product, the Insurance Machine, administers life, health, and annuity product lines.

b. Markets Served

EDS serves health insurance providers, including Blue Cross/Blue Shield and Medicaid on a very large scale.

EDS operates General Motors' automated insurance and claims programs leveraging its position as a GM subsidiary.

EDS's Insurance Machine systems are targeted to large firms in the life and property/casualty sectors. Long-term contracts for facilities management with leading firms such as Allstate, Aetna, and Transamerica reflect EDS's approach to this market.

c. Recent Activities

EDS has successfully consolidated 90% of the GM health-care program.

EDS has solidified a relationship with the NASCO consortium, providing for long-term processing contracts with five of the largest Blue Cross/Blue Shield firms in the U.S.

EDS has closed a number of other very significant large orders in 1987, bringing its revenues from the insurance sector to over \$400 million. This makes EDS the industry leader by a wide margin (refer to Exhibit III-1).

d. Future Strategies

EDS will continue to position itself as a uniquely experienced technology company, able to execute very large and complex data processing operations in a more effective manner than any of its competitors.

12. Other Vendor Activity

The McDonnell Douglas Information Systems Group (MDISG) offers plan administration, claims administration and reporting/analysis for health claims operations. The Physician Systems Company serves



medical clinics, HMO's, medical schools, and physicians. This vertical market produces about \$30 million in annual revenues, ranking MDISG in the top ten vendors of insurance IS revenues.

Vantage Computer System provides life and annuity products.

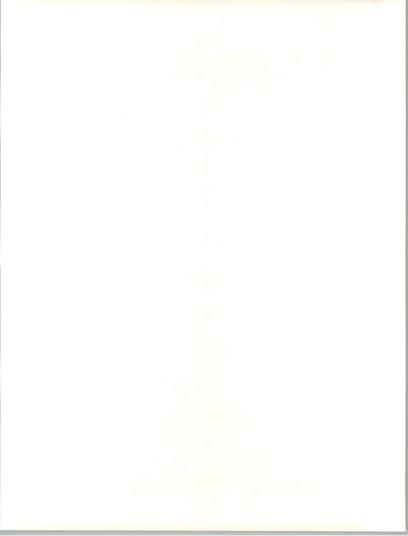
Incepts, Inc. offers home office administration software and services for life insurance companies. Batch processing accounts for 75% of Incepts' revenues.







Information Systems Department





Information Systems Department

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Major Issues

1. Driving Forces

The life insurance segment of the insurance industry is enjoying significant growth. Major contributing factors include:

- Tax legislation permitting insurance companies to include life insurance-based investment vehicles in their product line.
- The variable annuity and universal life products that allow the client to make investment decisions. Insurance companies are using this feature to initiate the transfer of a major portion of risk into the client's hands. Business is increased and risk to insurance companies is reduced.

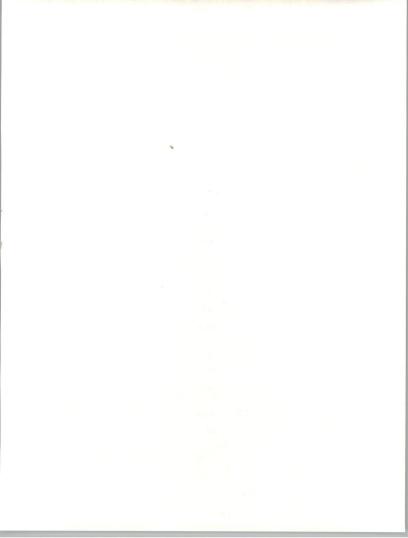
This segment continues to face:

- · The shift from a product to a customer focus
- The requirement for competitive agent support systems for proposal preparation, administration, client information, and tracking.

The health segment of the insurance industry continues to be pressured by employers/customers to cut costs. It also faces increasing competition from the health maintenance organizations (HMOs). In some cases, health insurers are implementing HMOs themselves.

Additionally, new trends are causing significant change in the industry including:

 Flexible benefit programs. No longer do employers buy packages and provide them for all employees. Today, more and more employers are providing a menu of benefits for their employees to choose from due to



changing social and economic conditions; thus, the health industry must sell to the individual as well as the corporation. These changes are causing a substantial investment in information systems and procedures to support the entire product life cycle.

- Medicare mandating fixed prices for outpatient care. Hospitals can no longer routinely bundle overhead into these charges. This is causing a review of processes and procedures for both hospitals and insurance companies.
- Many health-care providers are moving from an acute-care orientation to a trauma, surgical, or accident center basis. The individual practice has completely given way to group practices and various forms of affiliated practices.

The property/casualty segment of the insurance industry continues to experience problems due to pricing policies of the last decade, interest rate fluctuations, and large settlements awarded to claimants. This segment also faces:

- · Increased competition, including captive and self-insurers
- · Elimination of and/or significant changes in the agent relationships
- · Setting of liability limits
- Cost reduction through automation of paperwork, consolidation of backbone systems, and replacement of older technologies and fragmented systems that do not meet functional or capacity needs
- Extreme public-relations problems due to increased premiums and refusals to insure

Exhibit IV-1 summarizes the driving forces in the insurance industry sector.

2. Information Systems Issues and Objectives

Decreased profitability is the central issue for insurance firms due to a number of factors, including:

- High administrative costs due to paperwork and/or very old systems
- Large underwriting losses
- Severe price competition
- Tax reform
- · Interest-sensitive investments and continued lower interest rates



EXHIBIT IV-1

INSURANCE DRIVING FORCES

- · Productivity and Cost Reduction
- Tax Reform
- · Risk, Profitability, and Business Management
- Flexible Benefit Programs
- Government Regulation of Costs

- · Agent demand for on-line support systems
- Nonprofitable insurance products that were based on technology rather than an ROI analysis

With the changing and very complex insurance products, the newer technologies, and the information systems (IS) function at the core of the daily execution of business, management is requiring new tools and procedures to effectively manage an accelerating rate of change and ensure that the IS dollar is allocated and used most profitably to meet the corporate objectives. To this end there is a focus on providing IS tools for:

- · Product and business planning
- · Risk analysis and management
- Minimizing the amount of administrative information stored and reducing administrative processes
- · Financial analysis
- · End-user access to client and product information
- · Single data bases (distributed eventually)
- PCs and/or other access/computational devices targeted for or in most end-users' hands

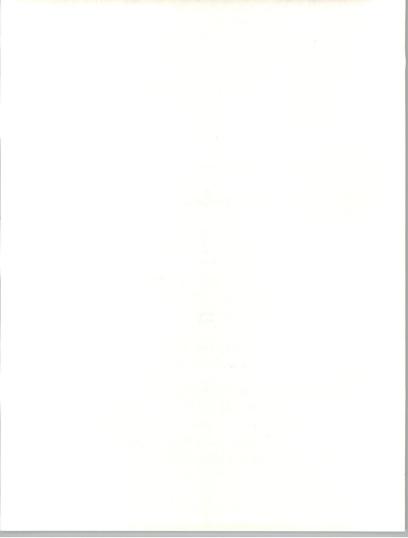


EXHIBIT IV-2

INSURANCE IS ISSUES

- Productivity Nonprofitability
- · Competitive Agent Support
- Financial Risk on Investments
- Market Share
- Management Effectiveness
- · Administrative Paperwork Bottlenecks

In the life sector, the 1986 tax reform has resulted in the investment insurance vehicle. Concurrently, the ability for a purchaser of insurance to personally direct the investment of his funds is both a draw for new business and a major profit risk reducer for the insurance companies. This has resulted in major IS support work.

In the life and health sectors, flexible benefit plans are changing the ways insurance is provided through employers. As individuals select custom benefit programs, both the sales and administrative processes must be revamped, including the related IS systems.

IS staffing remains a major issue with retention of key personnel a serious concern. Several of the executives surveyed cited that candidates feel the insurance business just is not interesting to most computer professionals. Industry and technology changes cited above may reverse this trend in the next few years.

Exhibits IV-2 and IV-3 summarize the key issues and objectives as identified by the respondents.

3. Impact of New Technology

Technologies that allow insurance companies to connect end-user terminals to central sites are key to current and future success. This area of computing is already fully integrated in a few very successful corpora-

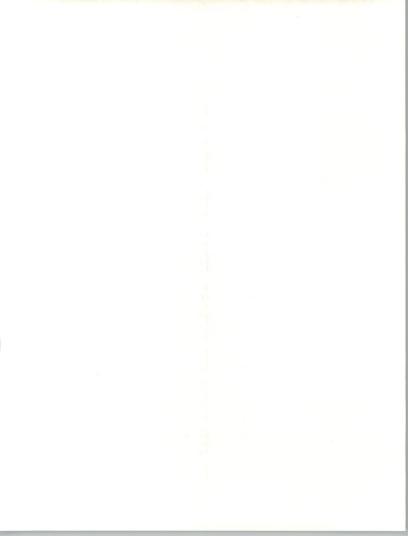


EXHIBIT IV-3

INSURANCE IS OBJECTIVES

- · Provide Business Management of IS
- Develop Risk Reducing Products
- Expand Market and Client Base
- Improve Operational Efficiency and Customer Support

tions using available technology and strict controls. All respondents agreed, however, that serious technology problems will remain, such as:

- · Lack of capability to easily integrate mixed vendors into LANs.
- Problems of providing and controlling software release levels from the
 central site. Sending thousands of floppies without control of installation and use is confusing at best. Further, as larger regional centers are
 set up, there is no satisfactory technology available to download the
 many megabytes of operating systems, applications, and data in a
 timely, controlled, and cost-effective manner.
- Unattended operation of office or regional installations remains a user objective but not a technical reality.

Distributed (or apparently distributed) data bases are not yet viable on a large operational scale. End-user data access is becoming increasingly critical for all sectors of the insurance industry.

Artificial intelligence and its applications were mentioned by all respondents. Recent developments from the artificial intelligence (AI) community are very interesting, but these solutions will not be available in the operational or tactical timeframes desired by most respondents. Applications of major interest include:

· Risk and asset management



- Support for the field agent in customizing a policy to meet specific financial and subjective objectives of the client
- · Medical review analysis as well as diagnostic services

A strong requirement was voiced by more than half the respondents for volume image processing of typed and, especially, handwritten documents. This remains a strategic technology but is not expected to be practically applicable in the near term.

Reduction of paperwork remains a major issue. One medium-sized firm stated it prints two miles of paper every hour; another prints 100 pages per partner per day. This has to be brought under control from management, resource, and business perspectives.

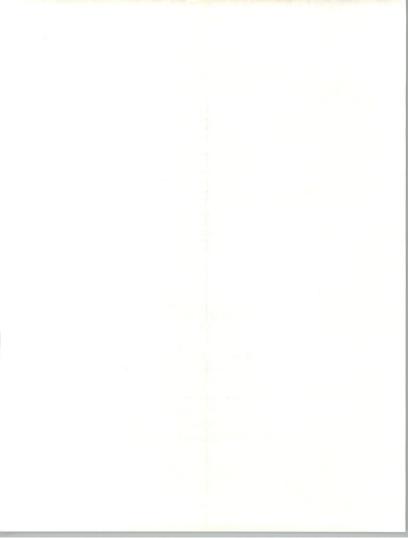
Information technology to assist the IS and corporate executives in business, product, asset, risk, and profit planning and management is available in bits and pieces but is still in the formative stages of development. Furthermore, due to the increased variety and complexity of financial instruments, fluctuating interest rates, and economic factors, there is an accelerating demand for sophisticated IS technology to manage portfolios and profitability.

Exhibit IV-4 summarizes the areas of new technology that are of high interest to the insurance industry.

EXHIBIT IV-4

INSURANCE NEW TECHNOLOGY AREAS OF INTEREST

- · Data Bases-Distributed and/or Relational
- Networks—Integrated Mixed Vendor
- Artificial Intelligence—Risk Analysis
- · Image Processing-Machine and Handwritten
- IS Integrated Business Management Tools
- Unattended Operation



R

New Applications

Major applications development continues in agent support systems for proposal work, flexible benefit sales, client tracking, and administration.

Procedures and systems applications are being developed to provide distribution and release-level control of software that is downloaded to regional, end-user, and agent sites. Site support will include from 10,000 to 15.000 locations.

Some relational and distributed data bases are in place, albeit mostly in pilot mode. Every account we talked with does not believe the management, technology, and control problems are satisfactorily solved. Continued development activity in the face of inadequate technical solutions testifies to the importance of these applications to the insurance industry.

New systems are being developed to support new insurance products that allow the purchaser to manage his investment.

AI programs and expert systems are in the initial stages of development for application in a number of areas, including:

- · Financial investment management
- · Premium calculations
- Loss limits
- · Medical review
- · New product ventures and business ROI planning

Single premium products are being developed.

There is continued development of new and completely reworked administration and claims systems for all segments of the industry. Old systems often cannot support capacity demands, nor do they provide the services and functions required in today's insurance world. These system replacements are unavoidable, essential to meeting the IS needs of the end users, and a current activity cited by all respondents.

Exhibit IV-5 summarizes major new applications as identified by the respondents. Exhibit IV-6 summarizes sources of new application products, and Exhibit IV-7 summarizes assignment of development staff.

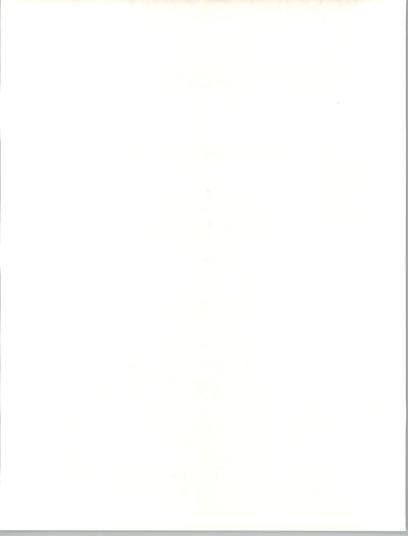


EXHIBIT IV-5

INSURANCE NEW APPLICATIONS

- · End-User Administration and Data Access
- · Software Distribution and Release Control
- · Risk-Reducing and Business-Management Tools
- · Tools for Customer Investment Management
- · Policy Administration and Claims Processing
- · Distributed Data Bases with Central Control





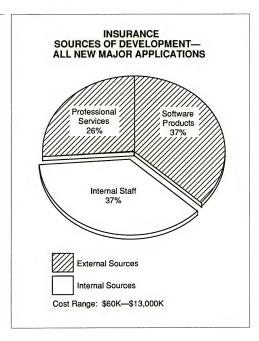
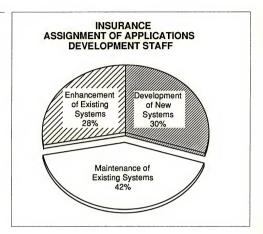




EXHIBIT IV-7



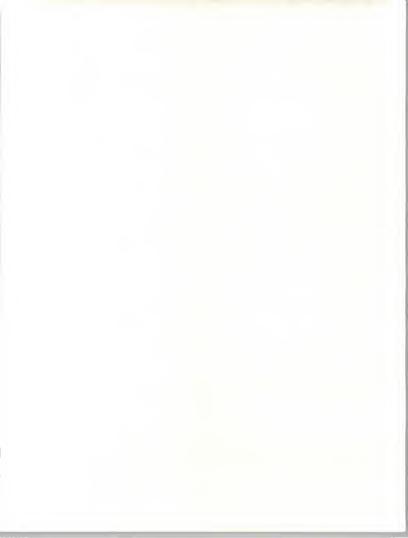
C Budget Analysis

The insurance sector's IS department operating budgets are not primarily dependent on revenue or profits because of the critical nature of IS to the long-term success of the company. In growing companies, new products and applications are routinely justified using business case (ROI) analysis. Stabilized and downsizing companies continue to justify budget decisions using "keeping up with technology" as the primary decision criterion.

Insurance companies' IS budgets are growing, overall, at a faster rate than last year, with 20% in the 50-100% range due to excellent growth. Another 10% are stabilized or actively downsizing, and the rest are growing at 5-15% a year. The average is 9.6%.

Key factors impacting the budget are:

- Continued investment in automation of paperwork for the long-term cost savings
- Investment in new insurance vehicles such as the single-premium whole life, variable annuities, and universal life



 Reworking or complete redevelopment of insurance administration systems to take advantage of new IS technologies and to replace wornout systems

- · Business management systems both for justification and tracking
- · Disaster planning

Exhibit IV-8 shows the 1987 budget distribution and projects the 1987-1988 budget growth for the industry's IS costs.

- The largest budget growth areas include personnel, communications, and professional services, reflecting the extensive applications development and support activities.
- The smallest growth area is in overall hardware expenditures. This
 reflects adequate capacities and good price/performance from the
 primary yendors.
- Personnel and hardware costs have stayed reasonably stable in the 32% range, and software costs have increased by more than 20%. In the personnel area, 1987 did not show a large percent increase, but hiring is ramping up, and while some companies are stabilized or downsizing, 20% expect a 1988 growth of at least 50%.

Eighty percent of respondents indicated that their budgets would increase over 1986.

Factors contributing to budget increases include:

- · Staffing
- · Reworked or new administrative systems
- · New product development
- Business expansion

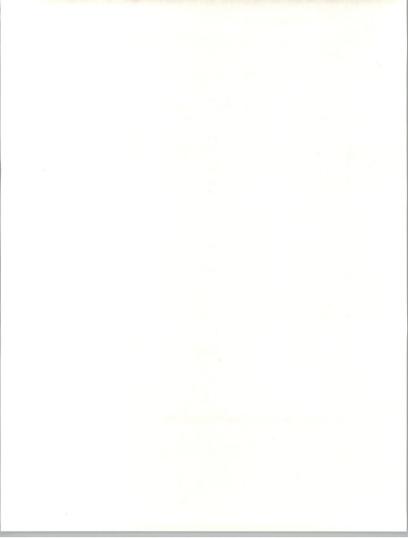
Factors contributing to budget decreases include:

- · Business downsizing
- · Major new hardware not needed; sufficient capacity

EXHIBIT IV-8

INSURANCE 1987 BUDGET DISTRIBUTION AND 1987-1988 CHANGES IN THE INSURANCE SECTOR

Budget Category	1987 Percent of IS Budget	1987-1988 Expected Budget Growth		
Personnel Salaries and Fringes	34.1	15.3		
Mainframe Processors	14.3	1.3		
Minicomputers	1.8	12.6		
Microcomputers	5.0	15.1		
Mass Storage Devices	5.1	3.0		
Other Hardware	5.9	.6		
Total Hardware	32.1	2.0		
Data Communications	14.1	10.0		
Voice Communications	4.2	11.1		
Total Communications	18.3	10.3		
Professional Services	2.4	2.3		
Outside Processing Services	1.1	5.1		
External Software	5.5	10.0		
Software Maintenance	1.7	7.0		
Hardware Maintenance	4.8	10.0		
Other	_	9.6		
Total	100	9.6		





Vendor Opportunities





Vendor Opportunities

Integration

The insurance industry entered computerization early with large mainframes dedicated to standalone functions. Many of these older systems are in need of replacement, and vendors presenting on-line integrated, multi-function systems can achieve penetration here.

Artificial Intelligence/ Expert Systems

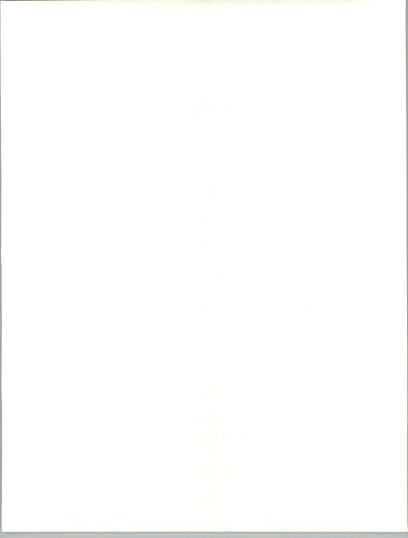
The repetitive, high-volume nature of many insurance applications, coupled with judgmental needs, lends itself to the use of artificial intelligence to improve both quality and quantity of results. Potential applications now being developed (and some already announced) include:

- · Underwriting/risk management
- · Claims management
- Adjusting
- · Investment management
- Personal financial planning
- · Policy customization by field agents
- Medical review analysis

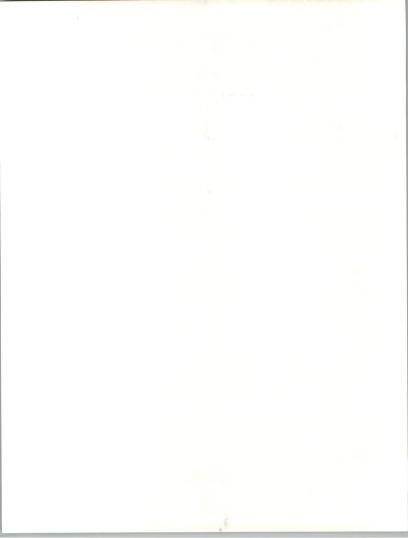
Electronic Data Interchange (EDI)

There are 35,000 independent agents in the U.S. At present, 60% of them have some level of automation with much more to come. Each of these agents must transmit data to one or more (usually 2-5) insurance companies. EDI offers dramatic expense and time reduction in moving data between agencies and insurers, and even to the consumers.

The nonprofit Insurance Value-Added Network Services (IVANS) uses IBM's information network to provide connectivity to about 3,000 agents; Aetna and Travelers have established their own private networks. Clearly, there is significant potential remaining, especially as I1R/Accord standards are established for more documents and functions.



D	
PC Software for Agencies	PCs are becoming a standard marketing tool for independent agents to more effectively communicate and present alternatives in sales situations. Software which enables agents to be more productive will be well re- ceived.
E	
Customized Benefit Plans	The trend toward customized individual benefit plans will place great importance on software that facilitates customization analysis, preparation, tracking, and reporting. Single premium, variable annuities and universal life policies are examples of products that can require customization.
F	
Development Productivity Tools	Most insurance companies have heavy backlogs for new mainframe- based applications. Tools which can demonstrably improve programmer productivity in such environments will have high priority.





Appendix: Forecast Data Base





Appendix: Forecast Data Base

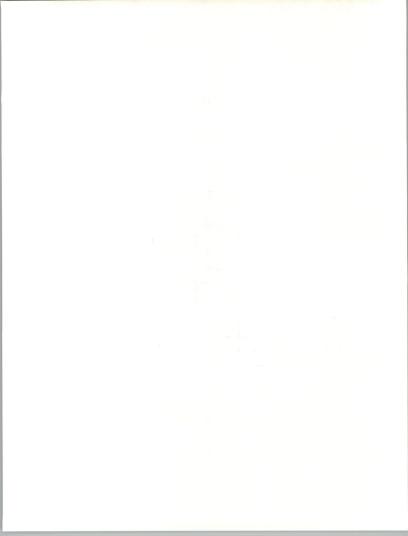
This appendix contains the following forecast information, as shown in Exhibits IN-A-1 through IN-A-4.

- · Market size by delivery mode for each year from 1986-1992
- · Market growth rates for 1986-1992
- Average annual growth rate (AAGR) for each delivery mode for the five-year period 1987-1992
- Market size and growth rates for each sector of the insurance industry, 1986-1992



INSURANCE INDUSTRY SECTOR INDUSTRY-SPECIFIC USER EXPENDITURE FORECAST, 1986-1992

Segmentation by Delivery Mode	1986 (\$M)	86-87 Growth (Percent)	1987 (\$M)	1988 (\$M)	1989 (\$M)	1990 (\$M)	1991 (\$M)	1992 (\$M)	87-92 AAGR (Percent)
Processing/Network Services									
Remote Comp/Batch	344	15	395		509		638	707	12
Facility Management	361	10	397	437	480	528	581	639	10
Total Processing Services	705	12	792	887	989	1098	1219	1346	11
Applications Software									
Mainframe/Mini	282	19	335	395	458	527	601	687	15
Micro	109	35	147	191	241	294	353	431	24
Total Applications									
Software	391	23	482	586	699	821	954	1118	18
Turnkey Systems	179	18	204	233	263	295	327	360	12
Professional									
Services	894	14	1054	1174	1331	1544	1858	2239	16
Sector Total	2169	17	2532	2880	3282	3758	4358	5063	15



INSURANCE INDUSTRY SECTOR LIFE AND HEALTH SEGMENT EXPENDITURE FORECAST, 1986-1992

Segmentation by Delivery Mode	1986 (\$M)	86-87 Growth (Percent)	1987 (\$M)	1988 (\$M)	1989 (\$M)	1990 (\$M)	1991 (\$M)	1992 (\$M)	87-92 AAGR (Percent)
Processing/Network Services Remodel Comp/Batch	165		190	214	242	272	306 533	344 587	
Facility Management Total Processing Services	329 494	10	363 553	614	439 681	756	839	931	10
Applications Software Mainframe/Mini Micro	134 62	16 35	156 84	190 112	221 141	254 168	288 194	330 229	16 23
Total Applications Software	198	23	240	302	362	422	482	559	18
Turnkey Systems	90	14	103	121	138	156	173	189	13
Professional Services	581	18	683	741	824	951	1165	1428	16
Total	1361	18	1579	1778	2005	2285	2659	3107	15



INSURANCE INDUSTRY SECTOR PROPERTY/CASUALTY SEGMENT EXPENDITURE FORECAST, 1986-1992

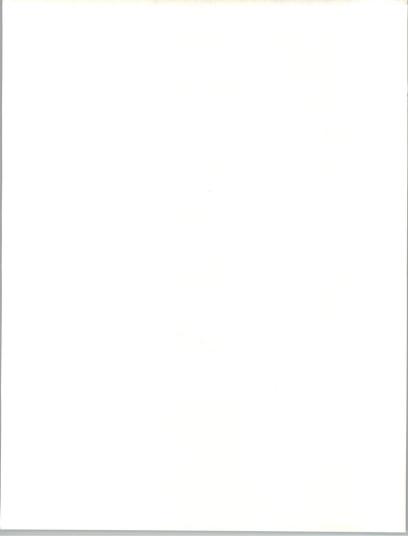
Segmentation by Delivery Mode	1986 (\$M)	86-87 Growth (Percent)	1987 (\$M)	1988 (\$M)	1989 (\$M)	1990 (\$M)	1991 (\$M)	1992 (\$M)	87-92 AAGR (Percent)
Processing/Network Services									
Remote Comp/Batch Facility Management	65 12	16 8	73 13	83 14	94 16	107 17	121 19	138 20	13 10
Total Processing Services	77	12	86	97	110	124	140	158	13
Applications Software Mainframe/Mini Micro	97 35	22 35	118	136 60	157 77	180 98	206 125	232	14 28
Total Applications Software	132	25	165	196	234	278	331	393	19
Turnkey Systems	25	16	29	33	38	43	49	55	14
Professional Services	224	20	268	316	373	440	519	613	18
Total	458	20	548	642	755	885	1039	1219	17

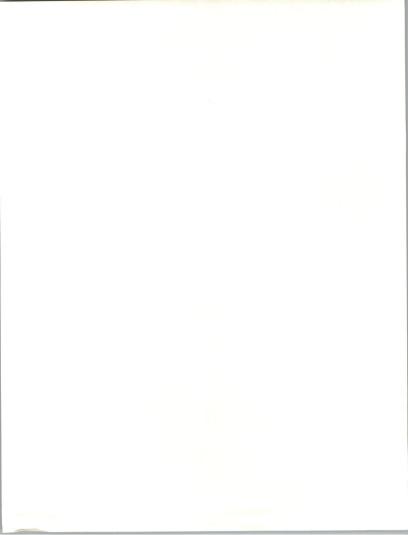


INSURANCE INDUSTRY SECTOR OTHER INSURANCE SEGMENT EXPENDITURE FORECAST, 1986-1992

INSURANCE

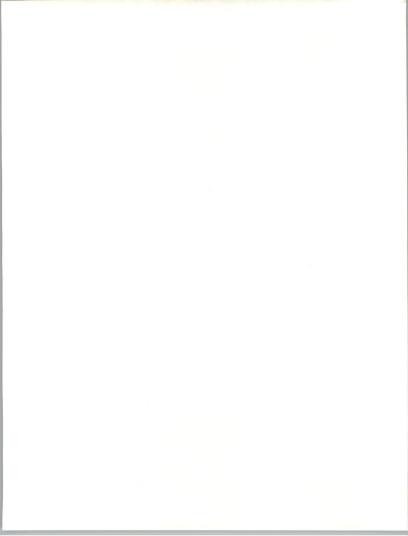
								_	
Segmentation by	1986	86-87	1987	1988	1989	1990	1991	1992	87-92
Delivery Mode	(\$M)	\$M) Growth		(\$M)	(\$M)	(\$M)	(\$M)	(\$M)	AAGR
•		(Percent)							(Percent)
Processing/Network			-						
Services									
Remote Comp/Batch	114	14	132	153	173	191	211	225	11
Facility Management	20	5	21	23	25	27	29	32	9
Total Processing									
Services	134	12	153	176	198	218	240	257	10
Applications Software			١					405	45
Mainframe/Mini	51	19	61	69	80	93	107	125	15
Micro	12	33	16	19	23	28	34	41	21
Total Applications					400	101		400	47
Software	63	20	77	88	103	121	141	166	17
Turnkey Systems	64	16	72	79	87	96	105	116	10
Turnkey Systems	04	10	12	13	0,	30	103	110	10
Professional									
Services	89	16	103	117	134	153	174	198	14
00111000	30		.50			-30			
Total	350	16	405	460	522	588	660	737	13







Appendix: Forecast Reconciliation





Appendix: Forecast Reconciliation

This appendix contains the following information:

- Exhibit IN-B-1, which indicates the changes made in this year's forecast as compared to last year's
- Compared to the 1986 report, the 1987 report shows slower growth than expected during 1987 in all delivery-mode categories. Deferred buying decisions, rather than a major structural change, is the primary reason for this reduction.
- For the five-year forecast, turnkey systems growth will slow dramatically, from 20% to 12%. Numerous factors make turnkey systems growth more difficult, including declining hardware prices, reduced discounts from manufacturers to VARS and resellers, and more direct competition for end-user sales from the manufacturer's sales forces.

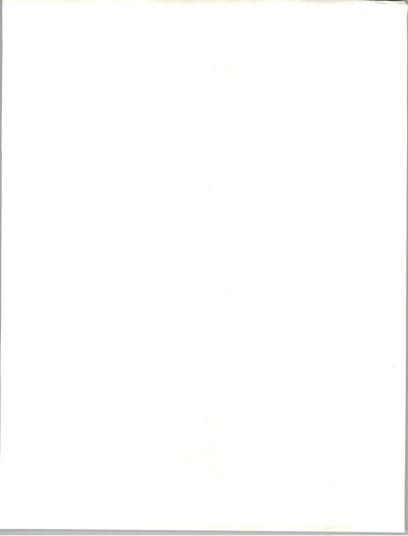


EXHIBIT B-1

INSURANCE—DATA BASE RECONCILIATION OF MARKET FORECAST BY DELIVERY MODE

	19	1986 Market			991 Mark	86-91 AAGR	87-92 AAGR	
Delivery Mode	1986 Forecast (\$M)	1987 Report (\$M)	Variance of '87 Report (Percent)	1986 Forecast	1987 Forecast (\$M)	Variance of '87 Fcst. (Percent)	Fcst. in 86 Report (Percent)	Fcst. in 87 Report (Percent)
Processing Services Remote Computing/ Batch Services Facility Management	304 325	344 361	-12 -10	626 619	638 581	-2 7	13 12	12 10
Total Processing Services	629	705	-11	1245	1219	6	12	11
Applications Software	311	391	-20	870	954	-9	19	18
Turnkey Systems	164	179	-8	480	327	46	20	12



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· Offices

NORTH AMERICA

Headquarters 1280 Villa Street Mountain View, CA 94041 (415) 961-3300 Telex: 171407 Fax: (415) 961-3966

New York Parsippany Place Corp. Center Suite 201 959 Route 46 East Parsippany, NJ 07054 (201) 299-6999 Telex: 134630

Washington, D.C. 8298C, Old Courthouse Rd. Vienna, VA 22180 (703) 847-6870 Fax: (703) 847-6872

Fax: (201) 263-8341

EUROPE

United Kingdom 41 Dover Street London W1X3RB England 01-493-9335 Telex: 27113 Fax: 01-629-0179

ASIA

Japan FKI Future Knowledge Institute Saida Building, 4-6. Kanda Sakuma-cho Chiyoda-ku, Tokyo 101. Japan

Fax: 011-03-864-4114

03-864-4026

